BROKERING AND FACILITATING CONSUMER PROJECTS IN AN E-COMMERCE SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is related to the following copending application, which are filed on even date herewith and incorporated herein by reference:

(1) U.S. Patent Application Serial No. ___/_____ (Attorney Docket No. AUS920010356US1).

BACKGROUND OF THE INVENTION

1.   Technical Field:

The present invention relates in general to electronic commerce and, in particular, to procuring a manufacturer for a project request. Still more particularly, the present invention relates to brokering a project request among multiple relevant

manufacturers in order to procure a manufacturer for the project request.

2. Description of the Related Art:

In recent years, with the development of computer network technology, an electronic commerce (e-commerce) system has developed in which consumers and vendors are connected via a network. Electronic commerce can occur between a consumer and a vendor through, for example, an online information service, the Internet, a bulletin board system (BBS) or electronic data interchange (EDI).

There are many different methods in which e-commerce may be implemented as there are a vast variety of commodities and services in need of being traded. Many e-commerce systems operate on a post and match process; that is, the systems work by having a prospective consumer bid on an item and if the bid matches the vendors's specified selling price, the item is sold to that consumer. In another example, many e-commerce systems involve on-line auctions where vendors place products or services up for bid and consumers electronically place bids for purchasing

the products or services; the item is sold to the consumer with

the highest bid. In yet another example of an e-commerce system,

vendors may offer a form for consumers to fill out for requesting

a particular service, such as a mortgage lender application; the

5   vendor compares the consumer information with pre-set lending

qualifications and responds based on whether the consumer

information meets the pre-set lending qualifications.

However, among the current e-commerce systems available, the

10   vendor specified products being offered are already manufactured

and the services are already specified. For example, the

products placed up for bid in an on-line auction are already

manufactured such that once the auction period has expired, the

product is shipped to the consumer placing the highest bid. In

15   addition, when a consumer fills out a mortgage lender

application, the mortgage lenders providing the lending service

have pre-set qualifying requirements for each consumer.

Consumers are able to bargain hunt among existing product and

service offerings; however, they are limited to those products

20   and services that vendors have already determined to provide.

Some vendors do allow consumers to specify an order;

however, that specification is restrained to a product already offered by that vendor. For example, a vendor may offer a "customizable calendar" of a particular size and shape, where the consumer can select the text style of the calendar. However, allowing a consumer a couple of choices for a calendar specified by that vendor is no different than a vendor offering a couple of different color or size choices for a sweater. In both cases, the consumer is still limited to the product or service offered by the vendor.

Therefore, in view of the aforementioned, it would be advantageous to provide an e-commerce method, system and program that allows consumers to procure a manufacturer specifically for a product or service designed by the consumer. In particular, it would be advantageous to provide an e-commerce method, system and program for brokering a product or service designed by the consumer to multiple manufacturers and then facilitating the feasibility of manufacturing the product or service.

SUMMARY OF THE INVENTION

In view of the foregoing, it is therefore an object of the present invention to provide an improved method, system and program for performing electronic commerce.

It is another object of the present invention to provide a method, system and program for procuring a manufacturer for a project request.

It is yet another object of the present invention to provide a method, system and program for brokering a project request to multiple relevant manufacturers in order to procure a manufacturer for the project request.

According to one aspect of the present invention, a specialized project request for a buyer is submitted to at least one manufacturer broker. Multiple feasibility responses for manufacture of the project request are received from multiple prospective manufacturers via at least one manufacturer broker. A response to the multiple feasibility responses is made by selecting a preferred manufacturer from among the multiple

prospective manufacturers, such that a buyer procures a preferred

manufacturer from among the multiple prospective manufacturers

utilizing a single project request.

According to another aspect of the present invention, a

project request is received from a buyer. The project request is

then distributed according to type of manufacture to a selection

of prospective manufacturers from among multiple available

manufacturers. In response to receiving feasibility responses

from the selection of prospective manufacturers, the

manufacturing feasibility of the project request is facilitated

according to the feasibility responses, such that a project

request is brokered for a buyer to facilitate obtaining a

manufacturer for a project request.

All objects, features, and advantages of the present

invention will become apparent in the following detailed written

description.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention

are set forth in the appended claims. The invention itself

however, as well as a preferred mode of use, further objects and

advantages thereof, will best be understood by reference to the

following detailed description of an illustrative embodiment when

read in conjunction with the accompanying drawings, wherein:

Figure 1 depicts one embodiment of a computer system with

which the method, system and program of the present invention may

advantageously be utilized;

Figure 2 illustrates a simplified block diagram of a

client/server environment in which electronic commerce typically

takes place in accordance with the method, system and program of

the present invention;

Figure 3 depicts a block diagram of a preferred

client/server environment for procuring a manufacturer for a

specialized customer request and then further specifying

manufacture according to customer orders according to the method,

system and program of the present invention;

Figure 4 illustrates a graphical representation of a project request entry in accordance with the method, system and program of the present invention;

Figure 5 depicts a graphical representation of a manufacturer availability response received from the manufacturer broker system in accordance with the method, system and program of the present invention;

Figure 6 illustrates a high level logic flowchart of a process and program for facilitating a buyer project request in accordance with the method, system and program of the present invention;

Figure 7 depicts a high level logic flowchart of a process and program for procuring a manufacturer for a buyer project request in accordance with the method, system and program of the present invention;

Figure 8 illustrates a block diagram of a data storage structure for manufacturer information in accordance with the method, system and program of the present invention;

Figure 9 depicts a block diagram of a data storage structure for buyer information in accordance with the method, system and program of the present invention;

Figure 10 illustrates a block diagram of a data storage structure for current project requests in accordance with the method, system and program of the present invention;

Figure 11 depicts a graphical representation of one embodiment of a project display to a customer in accordance with the method, system and program of the present invention;

Figure 12 illustrates a high level logic flowchart of a process and program for managing customer order placement in accordance with the method, system and program of the present invention;

Figure 13 depicts a high level logic flowchart of a process

and program for managing pre-manufacture orders in accordance

with the method, system and program of the present invention;

5   Figure 14 illustrates a block diagram of a data storage

structure for project offers in accordance with the method,

system and program of the present invention;

         Figure 15 depicts a block diagram of a data storage

10   structure for logging orders from customers in accordance with

the method, system and program of the present invention;

         Figure 16 illustrates a block diagram of a data storage

structure for cataloguing customer registrations in accordance

15   with the method, system and program of the present invention; and

         Figure 17 depicts a high level logic flowchart of the

process and program for controlling manufacturer responses to

project requests and project offer special requests in accordance

20   with the method, system and program of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A method, system and program for procuring a manufacturer for a buyer project request and then customizing manufacture of the buyer project request according to customer orders is described. In the present invention, "buyer" preferably refers to the individual, group, organization, business or corporation submitting a project request. "Projects" preferably include both products and services before manufacture. "Project request" preferably refers to requests for manufacture of both products and services. "Manufacturer" preferably refers to the individual, group, organization, business or corporation that will bid on project requests and then manufacture the project request. "Customer" preferably refers to an individual, group, organization, business or corporation offering to purchase a project.

In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent, however, to one skilled in the art that the present invention may be practiced without these specific

details. In other instances, well-known structures and devices

are shown in block diagram form in order to avoid unnecessarily

obscuring the present invention.

5   HARDWARE OVERVIEW

     The present invention may be executed in a variety of

systems, including a variety of computing systems and electronic

devices under a number of different operating systems. In one

10 embodiment of the present invention, the computer system is a

portable computing system such as a notebook computer, a palmtop

computer, a personal digital assistant, a telephone or other

electronic computing system that may also incorporate

communications features that provide for telephony, enhanced

15 telephony, messaging and information services. However, the

computer system may also be, for example, a desktop computer, a

network computer, a midrange computer, a server system or a

mainframe computer. Therefore, in general, the present invention

is preferably executed in a computer system that performs

20 computing tasks such as manipulating data in storage that is

accessible to the computer system. In addition, the computer

system preferably includes at least one output device and at

least one input device.

Referring now to the drawings and in particular to **Figure 1**, there is depicted one embodiment of a computer system with which the method, system and program of the present invention may advantageously be utilized. Computer system **10** comprises a bus **22** or other communication device for communicating information within computer system **10**, and at least one processing device such as processor **12**, coupled to bus **22** for processing information. Bus **22** preferably includes low-latency and high-latency paths that are connected by bridges and controlled within computer system **10** by multiple bus controllers.

Processor **12** may be a general-purpose processor such as IBM's PowerPC™ processor that, during normal operation, processes data under the control of operating system and application software stored in a dynamic storage device such as random access memory (RAM) **14** and a static storage device such as Read Only Memory (ROM) **16**. The operating system preferably provides a graphical user interface (GUI) to the user. In a preferred embodiment, application software contains machine executable

instructions that when executed on processor **12** carry out the

operations depicted in the flowcharts of **FIGS. 6, 7, 12, 13, 17**

and others described herein. Alternatively, the steps of the

present invention might be performed by specific hardware

5   components that contain hardwire logic for performing the steps,

or by any combination of programmed computer components and

custom hardware components.

       The present invention may be provided as a computer program

10   product, included on a machine-readable medium having stored

thereon the machine executable instructions used to program

computer system **10** to perform a process according to the present

invention. The term "machine-readable medium" as used herein

includes any medium that participates in providing instructions

15   to processor **12** or other components of computer system **10** for

execution. Such a medium may take many forms including, but not

limited to, non-volatile media, volatile media, and transmission

media. Common forms of non-volatile media include, for example,

a floppy disk, a flexible disk, a hard disk, magnetic tape or any

20   other magnetic medium, a compact disc ROM (CD-ROM) or any other

optical medium, punch cards or any other physical medium with

patters of holes, a programmable ROM (PROM), an erasable PROM

(EPROM), electrically EPROM (EEPROM), a flash memory, any other

memory chip or cartridge, or any other medium from which computer

system 10 can read and which is suitable for storing

5   instructions. In the present embodiment, an example of non-

volatile media is storage device 18. Volatile media includes

dynamic memory such as RAM 14. Transmission media includes

coaxial cables, copper wire or fiber optics, including the wires

that comprise bus 22. Transmission media can also take the form

10   of acoustic or light waves, such as those generated during radio

wave or infrared data communications.

    Moreover, the present invention may be downloaded as a

computer program product, wherein the program instructions may be

15   transferred from a remote computer such as a server 39 to

requesting computer system 10 (e.g., a client) by way of data

signals embodied in a carrier wave or other propagation medium

via a network link 34 (e.g., a modem or network connection) to a

communications interface 32 coupled to bus 22. Communications

20   interface 32 provides a two-way data communications coupling to

network link 34 that may be connected, for example, to a local

area network (LAN), wide area network (WAN), or as depicted

herein, directly to an Internet service Provider (ISP) **37**.   In

particular, network link **34** may provide wired and/or wireless

network communications to one or more networks.

ISP **37** in turn provides data communication services through

the Internet **38** or other network.   Internet **38** may refer to the

worldwide collection of networks and gateways that use a

particular protocol, such as Transmission Control Protocol (TCP)

and Internet Protocol (IP), to communicate with one another.   ISP

37 and Internet **38** both use electrical, electromagnetic, or

optical signals that carry digital data streams.   The signals

through the various networks and the signals on network link **34**

and through communication interface **32**, which carry the digital

data to and from computer system **10**, are exemplary forms of

carrier waves transporting the information.

Further, multiple peripheral components may be added to

computer system **10**.   For example, an audio output **28** is attached

to bus **22** for controlling audio output through a speaker or other

audio projection device.   A display **24** is also attached to bus **22**

for providing visual, tactile or other graphical representation

formats. A keyboard **26** and cursor control device **30**, such as a

mouse, trackball, or cursor direction keys, are coupled to bus **22**

as interfaces for user inputs to computer system **10**. In

5   alternate embodiments of the present invention, additional input

and output peripheral components may be added.

With reference now to **Figure 2**, there is depicted a

simplified block diagram of a client/server environment in which

10   electronic commerce typically takes place in accordance with the

method, system and program of the present invention. The

client/server environment is implemented within multiple network

architectures. For example, the architecture of the World Wide

Web (the Web) follows a traditional client/server modeled

15   environment.

The terms "client" and "server" are used to refer to a

computer's general role as a requester of data (the client) or

provider of data (the server). In the Web environment, web

20   browsers such as Netscape Navigator typically reside on clients

40a-40n and render Web documents (pages) served by servers **42a-**

42n. Additionally, each of clients **40a-40n** and servers **42a-42n**

may function as both a "client" and a "server" and may be

implemented utilizing a computer system such as computer system

10 of **Figure 1.**

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The Web may refer to the total set of interlinked hypertext

documents residing on servers all around the world. A network

44, such as the Internet, provides an infrastructure for

transmitting these hypertext documents between clients **40a-40n**

10   and servers **42a-42n.** Documents (pages) on the Web may be written

in multiple languages, such as Hypertext Markup Language (HTML)

or Extensible Markup Language (XML), and identified by Uniform

Resource Locators (URLs) that specify the particular server **42a-**

42n and pathname by which a file can be accessed, and then

15   transmitted from server **42a-42n** to an end user utilizing a

protocol such as Hypertext Transfer Protocol (HTTP). Web pages

may further include text, graphic images, movie files, and sounds

as well as Java applets and other small embedded software

programs that execute when the user activates them by clicking on

20   a link.

Typically, servers **42a-42n** coupled to network **44** respond to document requests and/or other queries from clients **40a-40n** that are also coupled to network **44**. In a traditional client/server exchange, a user from client **40a** requests a document by entering a URL. In response, a Web browser executing from client **40a** opens a connection server **42a** via network **44** and initiates a request for the document. Servers **42a** delivers the requested document, typically in the form of a text document coded in HTML to clients **40a**.

MANUFACTURER PROCUREMENT AND ORDER SPECIALIZATION OVERVIEW

Referring now to **Figure 3**, there is depicted a block diagram of a preferred client/server environment for procuring a manufacturer for a specialized customer request and then further specifying manufacture according to customer orders according to the method, system and program of the present invention. As illustrated, multiple buyer request systems **52a-52n** are connected to network **60**. Buyer request systems **52a-52n** represent multiple client systems from which buyers may request access to a manufacturer broker system **50** via network **60**. Manufacturer

broker system **50** represents at least one server system which

facilitates entry of project requests from buyer request systems

52 and then communicates with multiple manufacturer systems **58a-**

58n via network **60** to receive bids and procure a manufacturer for

5   each project request. In particular, manufacturer systems **58a-**

58n may further communicate with each other or other

subcontractors to bid out portions of a project request. In an

alternate embodiment, manufacturer broker system **50** may be

incorporated into buyer request systems **52a-52n** or manufacturer

10   systems **58a-58n**.

    According to one advantage of the present invention, a buyer

may submit a project request via one of buyer request systems

52a-52n to be manufactured, but not need the number of units that

15   would make manufacture of the project feasible. Therefore,

advantageously a manufacturer can bid on a project request

contingent on a number of units being ordered by the buyer and

other customers. Also, advantageously, a buyer can obtain a

manufacturer and customers for a project utilizing a single

20   project request. Moreover, for a project that requires multiple

manufacturers, a buyer can obtain the multiple manufacturers in

different categories for a single project with a single project request.

Once a manufacturer is procured for a project request, manufacturer broker system 50 transmits the project request and manufacturer information to an order system 56. Order system 56 represents at least one server system which facilitates promotion of the project request to multiple customers with access to customer systems 54a-54n, processes customer orders received from customer systems 54a-54n and provides a specified order for the project request to the appropriate manufacturer system 58a-58n. In particular, customer systems 54a-54n represent multiple client systems from which customers, preferably other than the buyer can place customized orders for a project request. In the present invention, although depicted as independent systems, manufacturer broker system 50 and order system 56 may be integrated into a single server or group of servers.

According to another advantage of the present invention, a customer can access project offers from multiple diverse categories at a single interface. In addition, advantageously,

customers can drive the market for which goods are actually

manufactured according to customer interest. Moreover, a

customer can further specialize projects before manufacturer,

such that customer interest drives what projects are

5   manufactured.

The present invention is preferably utilized for projects

prior to manufacture such that buyers and customers control what

projects actually reach the marketplace. However, the present

10   invention may be utilized for projects that represent products or

services that were once manufactured, but are no longer

available. For example, if a manufacturer discontinues a line of

products, a buyer may submit a project request for that line of

products to be manufactured again. The same manufacturer or a

15   new manufacturer may be procured to manufacture the line of

products. Then customer orders of the product line will indicate

whether manufacture is feasible.

In an alternate embodiment of the present invention,

20   manufacturers may utilize manufacturer systems **58a-58n** to submit

project requests to manufacturer broker system **50** or directly to

order system **56**, such that manufacturers can determine the

feasibility of a project, specialize the project according to

customer interest and obtain orders from the project prior to

manufacture of the project.

5   BUYER PROJECT REQUEST PROCESS

        With reference now to **Figure 4**, there is illustrated a

graphical representation of a project request entry in accordance

with the method, system and program of the present invention. As

10   depicted, graphical display window **150** includes a buyer

identification (ID), buyer email address, selected categories of

manufacture, a project name, a range of units requested, and a

range of cost per unit.

15   In particular, the project request may be for a product, a

service, or a combination of products and services. In addition,

the project request may require a single manufacturer or multiple

manufacturers to complete the project.

20   Preferably, buyers register personal information with the

manufacturer broker system and are assigned a buyer ID. Then,

for each project request, buyers select from multiple categories

of manufacture that are associated with the project. A pull down

list, pop-up window list or other graphical function may be

utilized to provide a list of available categories of manufacture

to the buyer. Buyers may select a single or multiple categories

5   of manufacture. In addition, categories of manufacture may

include selectable subcategories. Moreover, a buyer may

designate particular manufacturers according to the manufacturer

ID or name.

10   The buyer preferably designates the number of units desired

and the cost per unit. The buyer may select ranges of units and

cost per unit as well as setting a minimum, maximum, medium, or

other limit. In addition, the buyer may designate the number of

units and desired cost per unit based on variations of the

15   project being requested. For example, the buyer may set one

price per unit based on using a metal material and a second price

per unit based on using a plastic material where the project

specification contains variables.

20   In addition, graphical display window **150** includes

selectable buttons **152** and **154** which when selected allow the

buyer to search a directory to designate a graphic file and

specification file for the project request. The graphic file

included in the project request may include, but is not limited

to including, 3-D graphical models, graphical labels, text

documents, and other graphic and text files that facilitate a

manufacturer in determining a bid for the project request and

then producing the project request. The specification file

included in the project request may include a web address at

which a description of the requested project is available for

both manufacturers and prospective customers. The web accessible

specification file may also include, for example, 3-D graphical

models, project specifications, graphical representations of the

project and textual information.

In the present example, a buyer is requesting a "world

season calendar" that is specified by the graphic file

"calendar.jpg" and the specification file located at

"buy2.com/calendar". The calendar specifications may include a

particular size of calendar that allows for showing the seasons

on each continent for each month. Such a calendar might be

particularly advantageous to a traveler who can quickly view the

season on the calendar when planning travel. In the example, the

buyer is requesting 20 to 30 units at a range of $6 to $7 per

calendar. However, as will be further described, a manufacturer

may bid on producing 100 units of the calendar to reach that

price range or may propose a higher price for the number of units

requested.

As an additional feature, the buyer may select the level of

security that should be applied to the project request. For

example, the buyer may elect to allow any other registered buyer

to view the current project request. Alternatively, the buyer

may elect to secure the project request and require non-

disclosure agreements to be signed by any manufacturer that the

project request is sent to. In another example, the buyer may

indicate that if other buyers submit similar project requests,

then those buyers may view the current project request. Also,

available security features may adjust automatically according to

the type of project request or the buyer may designate when

registering to always apply a particular minimum or maximum level

of security to every project request for that buyer.

Referring now to **Figure 5**, there is illustrated a graphical

representation of a manufacturer availability response received

from the manufacturer broker system in accordance with the

method, system and program of the present invention. As

depicted, graphical display window **170** includes multiple

available manufacturers who have placed bids for the project

request. Selectable buttons 174 each represent a "selectable URL"

5   at which the details of each manufacturer's bid or suggestions

for adjusting the project request can be viewed. The buyer can

select from among the manufacturer's bids using one of selectable

buttons **172**. In addition, the buyer may select a submit adjusted

project request button **176** in order to adjust the current project

10   request. As will be further described, manufacturers may bid on

the project request as is, submit bids based on alterations to

the project request made by the manufacturer, or provide the

buyer with suggestions on how to adjust the project request for

feasability. Alternatively, the buyer may select a secure

15   selected manufacturer button **178** which initiates transmittal of

the manufacturer selected by the buyer to the manufacturer broker

system.

In addition, preferably in another embodiment a buyer can

20   select multiple manufacturers for manufacturing a project where

the project requires multiple parts or where the buyer prefers to

keep at least one manufacturer on stand-by in case the first

manufacturer selected is unable to manufacture. In that case, a

buyer may rate manufacturers according to first pick, second

pick, etc. In addition, a buyer may allow for multiple

manufacturers to manufacture the same project where, for example,

the distribution areas of each manufacturer differ such that the

buyer is able to maximize expansion of the project.

With reference now to **Figure 6**, there is depicted a high

level logic flowchart of a process and program for facilitating a

buyer project request in accordance with the method, system and

program of the present invention. As illustrated, the process

starts at block **120** and thereafter passes to block **122**. In the

present embodiment, the process illustrated is being performed by

the buyer request systems, however in alternate embodiments, the

process illustrated may be performed by other client systems and

may include alternate steps than those depicted.

Block **122** illustrates transmitting a project request to the

manufacturer broker system. The project request may include, but

is not limited to, the information described in **Figure 4**. Next,

block **124** depicts a determination as to whether or not

manufacturer feasibility responses have been received from the

manufacturer broker system. Manufacturer feasibility responses

may include, but are not limited to, a bid for manufacturing the

project request, a suggestion for adjusting the project request,

or a termination of the pending project request. If no

manufacturer feasibility responses have been received, then the

process iterates at block **124**. If manufacturer feasibility

responses have been received, then the process passes to block

126. Block **126** illustrates displaying the feasibility responses

to the buyer, such as in **Figure 5**, and the process passes to

block **127**. Alternatively, the responses may be output to the

buyer via other media and in other formats.

Block **127** depicts a determination as to whether the response

is a project request termination. If the response is a project

request termination, then the process ends. If the response is

not a project request termination, then the process passes to

block **128**.

Block **128** illustrates a determination as to whether or not a

buyer selection has been made from among any manufacturers

submitting bids. If no buyer selection from among any

manufacturers submitting bids has been made then the process

passes to block **132**. However, if a buyer selection from among

any manufacturers submitting bids has been made, then the process

passes to block **130**. Block **130** depicts transmitting the buyer's

selection from among the proposed manufacturers to the broker

system and the process ends.

Block **132** depicts a determination as to whether or not a

buyer has adjusted the project request. If the buyer has not

changed the project request, then the process passes to block

133. If the buyer has changed the project request, then the

process passes to block **134**. Block **134** illustrates transmitting

the buyer's updated project request to the manufacturer broker

system and the process passes to block **124**.

Block **133** illustrates a determination as to whether or not

the buyer has canceled the project request. If the buyer has not

canceled the project request, then the process passes to block

124. If the buyer has canceled the project request then the

process passes to block **135**. Block **135** depicts transmitting a

project request cancellation to the manufacturer broker system

and the process ends.

MANUFACTURER BROKERING PROCESS

Referring now to **Figure** 7, there is depicted a high level

logic flowchart of a process and program for procuring a

manufacturer for a buyer project request in accordance with the

method, system and program of the present invention. As

depicted, the process starts at block **70** and thereafter proceeds

to block **72**. In the present embodiment, the process illustrated

is being performed by the manufacturer broker system, however in

alternate embodiments, the process illustrated may be performed

by other servers and may include alternate steps than those

depicted.

Block **72** depicts receiving a project request from a buyer.

Next, block **74** illustrates searching a database of current

project requests for projects in similar categories. In

particular, the current project requests may include, but are not

limited to, requests that are in the process of being approved,

approved project requests and projects in the process of being

manufactured or previously manufactured.

Thereafter, block **76** depicts a determination as to whether

or not the project request or a similar project already exists in

the database. If the project request or a similar project does

not already exist in the database, the process passes to block

84. If the project request or a similar project already exists in

the database, the process passes to block **78**.

Block **78** illustrates transmitting the existing project

request description to the buyer if the security for the existing

project request allows. Next, block **80** depicts a determination

as to whether or not the buyer selects the existing project. If

the buyer selects the existing project, the process passes to

block **82** where the manufacturer is contacted with the request and

the process ends. Alternatively, the buyer's project request may

be transmitted to the order system to be processed as will be

further described. Otherwise, if the buyer does not select the

existing project, the process passes to block **84**.

Block **84** depicts filtering and transmitting the project

request to relevant manufacturers. In particular, each

manufacturer is registered according to categories of projects

such that project requests are filtered and transmitted according

to project categories set by the buyer and also determined by the

manufacturer broker system. In addition, relevant manufacturers

may be determined by analysis of the project request,

manufacturer history, buyer history and other historical

information utilized by the manufacturer broker system or persons

employed to determine relevant manufacturers for project

requests.

Next, block **86** illustrates transmitting the project request

to other possible customers. A database of customers interested

in certain categories of projects and subcategories thereof may

be maintained such that customers can be polled for interest in

project request. Polling is preferably dependent upon buyer

designation of security for the project request. Thereafter,

block **88** depicts cataloging responses from relevant manufacturers

and possible customers.

Next, block **90** illustrates a determination as to whether or

not a project is feasible. At this initial stage, project

feasibility may be determined by whether manufacturers have

placed bids for the project request or not and any customer

feedback received. In particular, manufacturer bids may include

cut-off points where the price per unit changes, minimum unit

orders, maximum unit orders, types of customization available,

and other criteria. If the project is not feasible, then the

process passes to block 98. If the project is feasible, then the

process passes to block 92.

Block 92 depicts transmitting manufacturing availability

options to the buyer. Next, block 94 illustrates a determination

as to whether or not a manufacturer selection has been received

from the buyer. If a manufacturer selection has not been

received, the process iterates at block 94. If a manufacturer

selection has been received, the process passes to block 96.

Block 96 depicts transmitting the project request and

manufacturer selection to the order system and the process ends.

Block 98 illustrates suggesting project request adjustments

to the buyer when the project request is not feasible. Suggested

adjustments may be received from the manufacturers or may be

determined by the manufacturer broker system based on historical

feasibility data compiled for each project request. For example,

a manufacturer may not be willing to bid on the current project

request, but would be willing to bid on the project request if

the unit price was increased or if the number of units was

increased. Or, for example, a manufacturer may want information

about the number of potential customers for the project request,

before bidding on the project request. Alternatively, the

manufacturer broker system may recommend adjustments that

historically have aided in increasing feasibility such as

increasing the number of units, changing materials, changing

manufacture schedule time, etc.

Next, block **100** depicts a determination as to whether or not

project request adjustments are received from the buyer. If

project request adjustments are received from the buyer then the

bid procurement stage starts again at block **84**. If project

request adjustments are not received from the buyer then the

process passes to block **108**.

Block **108** illustrates a determination as to whether or not a

project request cancellation is received from the buyer. If a

project request cancellation is not received from the buyer, then

the process passes to block **102**. If a project request

cancellation is received from the buyer, then the process passes

5 to block **109**. Block **109** depicts terminating the project request

and the process ends.

Block **102** depicts polling additional manufacturers and

possible customers based on unit increases, design changes and

10 price changes that have been suggested by the manufacturers or

determined by the manufacturer broker system. Next, block **104**

illustrates a determination as to whether or not manufacturing is

available. If there is a lack of manufacturers willing to place

bids on the project and/or a lack of possible customer interest,

15 then manufacturing may be unavailable for the project request.

Additionally, after a particular amount of time, the bidding

process may automatically terminate. If manufacturing is

available, the process passes to block **84** where the broker system

utilizes the polled information to adjust the project request and

20 attempt to solicit bids. If manufacturing is not available, then

the process passes to block **106** where the project request is

terminated and the process ends.

With reference now to **Figure 8**, there is depicted a block

diagram of a data storage structure for manufacturer information

in accordance with the method, system and program of the present

invention. As illustrated, the data corresponding to

manufacturer registration information is preferably stored in a

data storage structure such as database table **180**. The example

database table **180** is provided in order to depict a selection of

fields **182** which may be included in a data storage structure.

Fields **182** include a manufacturer identification (ID), a

manufacturer name, a manufacturer (MFR) address, the main

categories of projects for that manufacturer, an email address, a

web site address, and a rating. For example, a registered

manufacturer with MFR ID "100" is named "XXX Inc." and

manufactures projects in the categories of computers and a

subcategory of peripherals for computers. In addition, although

not depicted, an activity history for each manufacturer may be

stored according to manufacturer ID. In alternate embodiments,

alternate selections for manufacture field information may be

included. In addition, alternate types of data storage

structures and methods may be utilized.

Preferably a rating system is provided to store references provided by buyers, customers, and other manufacturers. In particular, manufacturers are preferably specifically rated by the manufacturer, buyers, customers, and other manufacturers in multiple categories. For example, manufacturer "XXX INC" has been rated "1, 5, 2" corresponding to three rating categories. For example, rating categories may include, bid accuracy, reliability, stability, quality, size, growth, and other categories that aid buyers, customers and other manufacturers in selecting a manufacturer.

Referring now to **Figure** 9, there is illustrated a block diagram of a data storage structure for buyer information in accordance with the method, system and program of the present invention. As depicted, the data corresponding to buyer registration information is preferably stored in a database storage structure such as database table **190**. The example database table **190** is provided in order to depict a selection of fields **192** which may be included in a data storage structure.

Fields **192** include a buyer ID, a buyer name, a buyer address, an

email address, a web site address, and a rating system. For

example, the registered buyer with buyer ID "AA11" is named

"buy1" and has a web site "buy1.com". In addition, although not

depicted, an activity history for each buyer may be stored

according to buyer ID. In an alternate embodiment, alternate

selections for buyer field information may be included. In

addition, alternate types of data storage structures and methods

may be utilized.

Preferably a rating system is provided to store references

provided by the current buyer, customers, manufacturers, and

other buyers. In particular, buyers are preferably specifically

rated by the manufacturer, buyers, and customers in multiple

categories. For example, buyer "AA11" has been rated "1, 1, 1"

corresponding to three rating categories. For example, rating

categories may include, project request accuracy, reliability,

stability, quality, size, growth, and other categories that aid

buyers, customers and other manufacturers in responding to a

buyer.

With reference now to **Figure 10**, there is depicted a block

diagram of a data storage structure for current project requests

in accordance with the method, system and program of the present

invention. As illustrated, the data corresponding to current

project requests is preferably stored in a data storage structure

such as database table **200**. The example database table **200** is

provided in order to depict a selection of fields **202** which may

be included in a data storage structure. Fields **202** include a

project ID, a project name, a buyer ID, a manufacturing category,

a MFR ID, a buyer file URL, a MFR File URL and the status of the

project proposal. The buyer ID and MFR ID reference the

manufacturer table and the buyer table in **Figures 8** and **9**. In

the present embodiment, each manufacturer to which the project

request is distributed and each manufacturer response to each

project request is cataloged. Then, once at least one

manufacturer places a bid on the project request and the buyer

selects a manufacturer, the entry for the project request

according to the selected manufacturer is transmitted to the

order system. In alternate embodiments, alternate selections for

project proposal field information may be included. In addition,

alternate types of data storage structures and methods may be

utilized.

In the example, a project named "extra large headphones" was distributed to both MFR ID "100" and "300" since both manufacture in categories associated with headphones and a bid has been placed on the project by MFR ID "100". In addition, the project "world season calendar" was distributed to MFR ID "200" and suggestions for adjusting the project request have been received. Such suggestions are preferably accessible at the MFR URL file "YYY.com/calendarbid".

In an alternate embodiment, each manufacturer may access portions of project request feasibility responses included in database table 200 in order to monitor other manufacturer's bids, monitor the status of the project request, collaborate with other manufacturers and other actions that are valuable during the bidding process. Allowing each manufacturer to view the status of project request feasibility responses is preferably customizable according to security preferences of the buyer and each manufacturer responding to the project request.

CUSTOMER ORDER PLACEMENT PROCESS

Referring now to **Figure** 11, there is depicted a graphical

representation of one embodiment of a project display to a

customer in accordance with the method, system and program of the

5   present invention. As depicted, graphical display window **260**

includes a display area **262** for information referenced from the

buyer specification file for the project request. Next,

graphical display window 260 includes an entry area **261** for a

customer ID. Preferably, customers register with the order

10 server, as will be further described, such that a customer ID can

be used to reference the customer's financial and shipping

information.

Next, graphical display window **260** includes requirements,

15 adjustable selections and special instructions **264**. The

requirements for the project may be set, for example, by the

manufacturer or the buyer in order to ensure certain constraints.

For example, there may be a required number of units per order.

Adjustable selections may be pre-designated selections or

20 customer defined. For example, a customer may select from three

different pre-designated sizes for a particular project. Or, for

example, a customer defined number of units for the order.

Special instruction requests may include, for example, requesting

a size of a project that is not offered.

Once a customer has specified an order, selection of a place

order button 266 will initiate transmission of the order to the

order system. In particular, a customer may designate that the

order is contingent upon the adjustable selections and/or special

instructions being available. For example, if a user places an

order for a sweater with a special instruction requesting a size

not offered, the customer may indicate that placement of the

order is contingent upon that special size request being

available. In another example, a customer may place an order for

a product contingent on the product being available for a

particular price.

With reference now to **Figure 12**, there is illustrated a high

level logic flowchart of a process and program for managing

customer order placement in accordance with the method, system

and program of the present invention. As depicted, the process

starts at block **270** and thereafter proceeds to block **272**. In the

present embodiment, the process illustrated is preferably being

performed by the customer system, however in alternate

embodiments, the process illustrated may be performed by other

server systems and may include alternate steps than those

depicted.

Block **272** depicts a determination as to which event has

occurred. If an order response has been received, then the

process passes to block **274**. If a promotional or watch request

project has been received, then the process passes to block **280**.

Alternatively, if a search request has been received, then the

process passes to block **286**.

Block **274** illustrates displaying an order response. An

order response may include a verification that the order has been

placed, a verification that the order will be manufactured and

the expected shipping date, a request for an adjustment to the

order, or a cancellation of the order. Requests for adjustments

to orders may arise when a customer includes a special

instruction that a manufacturer will not handle. Next, block **276**

depicts a determination as to whether or not the customer

adjusted the order if requested to do so. If the customer

adjusts the order then the adjusted order request is transmitted

as illustrated in block **278**, replacing the previous order request

and the process ends. Otherwise if the customer does not adjust

the order request or was not requested to do so, the process

5   ends.

Block **280** depicts displaying the project. In particular, a

customer may designate a particular category or subcategory to

watch for new projects. The customer then receives information

10   about new projects in those selected categories through

electronic mail, cookies or other forms of transmitting project

offers based on preferences. In addition, the order system may

send promotional information for new projects. The project may

be displayed in a manner including, but not limited to, that

15   depicted in **Figure 11**. Next, block **282** illustrates a

determination as to whether or not the customer has selected to

place an order for the project. If the customer has not placed

an order, then the process ends. If the customer has selected to

place an order, then the process passes to block **284**. Block **284**

20   depicts transmitting the order request to the order system and

the process ends.

Block **286** illustrates transmitting a search request to the

order system. A customer may submit a search request for

projects based on categories, subcategories or other search

information entered by the customer. Next, block **288** depicts a

5   determination as to whether a search response has been received.

If a search response has not been received, the process iterates

at block **288** for a designated amount of time before an error

stops the process. If a search response has been received, then

the process passes to block **290**. Block **290** illustrates

10   displaying the search response. The search response may be

displayed, for example, in a list of project names including

graphical images representing each project. Next, block **292**

depicts a determination as to whether or not a project has been

selected from the list. If a project is not selected, then the

15   process ends. If a project is selected, then the process passes

to block **280** where the selected project is displayed.

ORDER MANAGEMENT PROCESS

20   Referring now to **Figure 13**, there is illustrated a high

level logic flowchart of a process and program for managing pre-

manufacture orders in accordance with the present invention. As

illustrated, the process starts at block **210** and thereafter

passes to block **212**. In the present embodiment, the process

illustrated is being performed by the order server, however in

5   alternate embodiments, the process illustrated may be performed

by other server systems and may include alternate steps than

those depicted.

Block **212** depicts receiving a project request and

manufacturer selection from the manufacturer broker system.

10   Next, block **214** illustrates making a project offer from the

project request and manufacturer selection for competitive

bidding by customers and the process passes to block **215**. In

particular, the project offer may include information such as the

15   price range according to number of units ordered, the

manufacturer, the buyer, the bid time and searchable project

categories. In addition when the project offer is compiled,

specifications given by the manufacturer and/or buyer may control

the required information, adjustable selections and range of

20   special instructions. For example, the manufacturer bid may

include cut-off points where the price per unit changes, minimum

unit orders, maximum unit orders, types of customization

available, and other criteria utilized by the order system to

compile the project offer.

Block **215** depicts searching a customer database for

customers interested in the project category and transmitting the

project offer in a customer specified format to those customers.

The customer specified format may include, for example, an

electronic mail (e-mail) notification. In addition, the buyer or

manufacturer may pay a fee to have the project offer transmitted

as a promotion to particular groups of customers. Alternatively,

a customer may pro-actively initiate a search in a particular

category which includes the project offer.

Next, block **216** illustrates a determination as to whether or

not the bid time has expired. Preferably a time period for

orders to be received is determined for each project offer. If

the bid time has expired, the process passes to block **224**. If

the bid time has not expired, the process passes to block **217**.

Block **217** depicts a determination as to whether or not an order

has been received. If an order has not been received, then the

process passes to block **216**.   If an order has been received, then

the process passes to block **218**.

Block **218** depicts a determination as to whether or not

special instructions are received with an order.   In particular,

each order is essentially a bid for the pre-manufacturer project

because each customer may further specialize the project with

additional specifications.   If special instructions are not

received with an order, then the process passes to block **222**.   If

special instructions are received with an order, then the process

passes to block **219**.   Block **219** illustrates transmitting the

special instructions request to the manufacturer.   Next, block

220 depicts a determination as to whether or not the manufacturer

has agreed to the special instructions.   If the manufacturer

agrees to the special instructions, then the process passes to

block **222**.   If the manufacturer does not agree to the special

instructions, then the process passes to block **223**.   Block **223**

illustrates requesting that the customer adjust the order and the

process passes to block **216**.

Block **222** illustrates updating the current offer status by

orders received. In updating the current offer, the price per

unit, minimum unit order, and other factors based on the overall

requirements may be updated.

5   Block **224** depicts closing the offer when the bid time has

expired. Next, block **225** illustrates a determination as to

whether or not the customer orders meet the overall project

requirements. For example, if the manufacturer set a minimum of

40 orders and only 15 were received, then the customer orders

10   would not meet the overall project requirements. In addition, in

determining whether the customer orders meet the overall project

requirements, individual project orders are analyzed to determine

if the contingent selections for each individual project order

are met. For example, if a customer places an order contingent

15   on a particular closing price and the price did not close at that

particular price, then that customer order does not meet the

overall project requirements either. Individual project orders

with contingent selections that are not met after closing the

offer are cancelled and the customer is notified.

20

If the customer orders meet the overall project

requirements, then the process passes to block **226**. If the

customer orders do not meet the overall project requirements,

then the process passes to block **229**. Block **229** depicts

cancelling all the orders and the process ends. In cancelling

the orders, preferably any customer, the buyer and the

manufacturer are notified that the orders did not meet the

overall project requirements.

Next, block **226** illustrates transmitting the catalogued list

of customer orders to the manufacturer and the buyer.

Thereafter, block **227** depicts a determination as to whether or

not an order list confirmation has been received. If an order

list confirmation has not been received, then the process

iterates at block **227**. Otherwise, once an order list

confirmation is received, the process passes to block **228**. Block

224 depicts updating customers with the ending price, charging

the customer account and providing an expected shipping schedule

according to information received with the order confirmation and

the process ends. Alternatively, the order list confirmation may

designate particular orders that will not be filled or that no

orders will be filled. Unless the manufacturer otherwise

indicates in the project offer, the manufacturer can choose

whether or not to manufacture and which orders in particular to

manufacture.

In particular, the ending price for each customer may vary

based on number of units ordered, frequency of purchases, special

instructions with orders and other factors that may effect an end

price of a specialized project. In addition, the manufacturer

may adjust the price per unit for each customer based on the

purchase history or purchase volume of that customer with the

manufacturer such that the manufacturer can offer discounts to

loyal or high volume customers.

With reference now to **Figure 14**, there is depicted a block

diagram of a data storage structure for project offers in

accordance with the method, system and program of the present

invention. As illustrated, the data corresponding to project

offers is preferably stored in a data storage structure such as

database table **230**. The example database table **230** is provided

in order to depict a selection of fields **232** which may be

included in a data storage structure. Fields **232** include the

project ID, project name, MFR ID, buyer ID, response due date,

data archived, status, overall order requirements, customer order

requirements, adjustable selections, project category, other

searchable categories and specification URL. In an alternate

embodiments, alternate selections for project offers may be

5   included. In addition, alternate types of data storage

structures and methods may be utilized.

For example, the overall order requirements indicate a

minimum number of units that must be ordered in order to

10   manufacture, price adjustments according to the number of units

ordered, adjustable selections and other information that is set

to determine whether any of the orders will be fulfilled. The

customer order requirements are order requirements of each

individual customer including, but not limited to, the design

15   specification for a project, the minimum number of units that

must be ordered, materials available for the project and other

specifications that are required for each customer order. The

adjustable selections are preferably variables that each customer

can designate or select from such as the number of units in the

20   order, colors, sizes, shapes, and other variables of a project

that the manufacturer is willing to adjust.

Referring now to **Figure 15**, there is illustrated a block

diagram of a data storage structure for logging orders from

customers in accordance with the method, system and program of

the present invention. As illustrated, the data corresponding to

customer order information is preferably stored in a data storage

structure such as database table **240**. The example database table

240 is provided in order to depict a selection of fields **242**

which may be included in a data storage structure. Fields **242**

include, but are not limited to, an order ID, a project ID, a

customer ID, customer instructions, adjustable selections, and

status. The customer ID references the customer table in **Figure**

16, as will be further described. In alternate embodiments,

alternate selections for customer order field information may be

included. In addition, alternate types of data storage

structures and methods may be utilized.

In the example depicted, an order placed for the "extra

large headphones" includes a special instruction for a particular

sized head. A manufacturer may determine to manufacture a set of

headphones specifically for that size of head, or may decline to

perform the special instruction. Additionally, a manufacturer

may decide to add the special instruction as an adjustable

selection for the project offer. In another entry, an order for

a "world season calendar" includes a request for landscape

photos to be included.

With reference now to **Figure 16**, there is depicted a block

diagram of a data storage structure for cataloguing customer

registrations in accordance with the method, system and program

of the present invention. As illustrated, the data corresponding

to customer personal information is preferably stored in a data

storage structure such as database table **250**. The example

database table **250** is provided in order to depict a selection of

fields **252** which may be included in a data storage structure.

Fields **252** include, but are not limited to, a customer ID, a

customer name, a customer address, an email address, financial

information and project category preferences. In addition,

although not depicted in the present embodiment, fields **252** may

include information such as references for the customer,

acknowledgment of a non-repudiation agreement, customer order

history and specific requests by the customer. Moreover,

alternate types of data storage structures and methods may be

utilized.

It is particularly advantageous that customers can place

orders for pre-manufacture projects requested by multiple

5   independent buyers to be manufactured by multiple independent

manufacturers without having to re-enter financial information

for each order at separate web sites since customers are

registered with the order server for all available projects as

illustrated in **Figure 16**. In addition, it is particularly

10   advantageous that customers can view the status of orders placed

with multiple independent manufacturers through a single data

request to the order server since the data structure of **Figure 15**

can be searched according to customer ID and status information

for each customer order obtained in a single transaction.

15

MANUFACTURER CONTEXT

With reference now to **Figure 17**, there is depicted a high

level logic flowchart of the process and program for controlling

20   manufacturer responses to project requests and project offer

special requests in accordance with the method, system and

program of the present invention. As illustrated, the process

starts at block **300** and thereafter proceeds to block **302**. In the

present embodiment, the process illustrated is being performed by

the manufacturer systems, however in alternate embodiments, the

process illustrated may be performed by other client/server

systems and may include alternate steps than those depicted.

Block **302** depicts a determination as to whether an event has

been detected. If a distributed project request has been

received, then the process passes to block **304**. If a project

offer special request has been received, then the process passes

to block **308**.

Block **304** illustrates determining the feasibility of a

project request. The feasibility of a project request may be

determined by multiple methods including both computer and human

analysis such as comparing the project request with pre-

determined criteria, analyzing the project request according to

current materials available, performing a cost analysis, and

other functions that aid the manufacturer in determining

feasibility. Ultimately, the manufacturer will decide to submit

a bid for the project request based on the current project

request or a project request adjusted by the manufacturer,

suggest adjustments to the project request, or decline to

participate in the project request. Next, block **306** depicts

returning a feasibility response for the project request and the

process ends.

Block **308** depicts determining the feasibility of a project

offer special request. Manufacturers can determine the

feasibility of manufacturing the project offer according to

special requests made by customers. Ultimately, the manufacturer

will decide to accept the special request, modify the special

request or decline the special request. Next, block **310**

illustrates returning an offer response for the project request

and the process ends.

Preferably, specialized software tools may be provided to

the manufacturer systems for determining the feasibility of

project requests and project offer special requests from the

manufacturer broker system or other provider. Particularly,

software tools may include artificial intelligence (AI)

applications that enable the manufacturing servers to make

feasibility decisions in lieu of a human operator.

While the invention has been particularly shown and described with reference to a preferred embodiment, it will be understood by those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope of the invention.